SSC MOCK TEST - 277 (SOLUTION)

1. (D) $60 : 15 :: 100 : \mathbf{25}$
    $\div 4 \qquad \div 4$

2. (A) As,

    W   T   Q
    ↓   ↓   ↓ Opposite pairs
    D   G   J

    Similarly,

    N   K   H
    ↓   ↓   ↓ Opposite pairs
    M   **P**   **S**
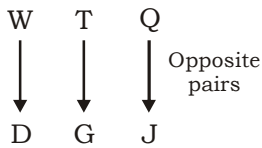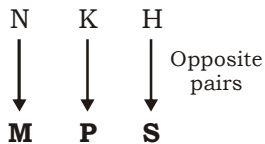
3. (D) 'Father' is related to 'Parents', similarly 'Sister' is related to 'Sibling'.

4. (C) Except option (C), others are sense of organs.

5. (D) Except (56,19), first number is the multiple of second number.

6. (D) (A) A   F   K   P   U
            +5 +5 +5 +5

    (B) E   J   O   T   Y
        +5 +5 +5 +5

    (C) I   N   S   X   C
        +5 +5 +5 +5

    (D) M   R   V   B   G
        +5 +4 +6 +5

7. (C) Satire → Stamped → Storm → Strangle → Strap
        5   4   1   3   2

8. (A)
    +3   +3   +3
    4 7 25 10 **13** 20 16 19 15
          −5   −5

9. (B)
            +1   +1   +1
    VI 10 V 11 **IV** 12 III 13
        −1   −1   −1

10. (C) As,

    S   Q   U   A   L   O   R
    +2 +2 +2 +2 +2 +2 +2
    ↓   ↓   ↓   ↓   ↓   ↓   ↓
    U   S   W   C   N   Q   T
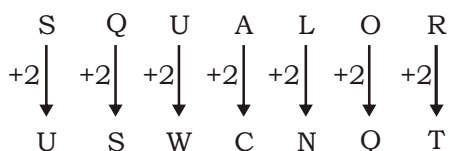
Similarly,

```
     W    H    Y
  +2 |  +2 |  +2 |
     ↓     ↓     ↓
     Y     J     A
```
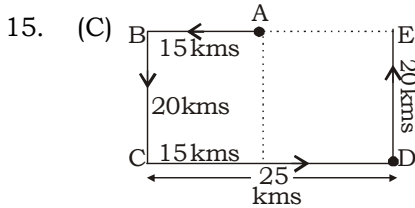
11. (C)

12. (D) **First Column,**
    $(2)^3 + (1)^3 + (3)^3 = 36$
    Second Column,
    $(4)^3 + (2)^3 + (1)^3 = $ **73**
    Third Column,
    $(0)^3 + (4)^3 + (3)^3 = 91$

13. (D) **First Row,**
    $10 - 4 = 6 \Rightarrow 6 \times 2 = 12$
    Second Row,
    $7 - \mathbf{2} = 5 \Rightarrow 5 \times 3 = 15$
    Third Row,
    $8 - 5 = 3 \Rightarrow 3 \times 1 = 3$

14. (A)

15. (C)

    Required Distance AE = 25 – 15 = 10 km

16. (C)

17. (C) As,

    ```
    b  o  o  k  =  c  q  r  o
    +1          ↑  ↑  ↑
       +2
          +3
             +4
    ```

    Similarly,

    ```
    a  u  t  h  o  r  =  b  w  w  l  t  x
    +1                ↑  ↑  ↑  ↑  ↑
       +2
          +3
             +4
                +5
                   +6
    ```
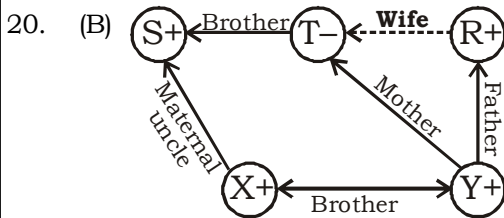
18. (A) $\dfrac{(36 \times 4) - 8 \times 4}{4 + 8 \times 2 + 16 \div 1}$
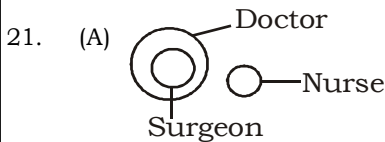
    After changing the sign,

    $$\dfrac{(36 - 4) \div 8 - 4}{4 \times 8 - 2 \times 16 + 1}$$

    $$= \dfrac{32 \div 8 - 4}{32 - 32 + 1} = \dfrac{4 - 4}{0 + 1} = 0$$

19. (A) $Z \xrightarrow{-2} X \xrightarrow{-2} \mathbf{V}$

$T \xrightarrow{-2} R \xrightarrow{-2} \mathbf{P}$

$N \xrightarrow{-2} L \xrightarrow{-2} J \xrightarrow{-2} \mathbf{H}$

$F \xrightarrow{-2} D \xrightarrow{-2} \mathbf{B}$

20. (B)

T is the wife of R

21. (A)

22. (C)

23. (C)

24. (C)

25. (A) T → **00**, 21, 42, 13, 34

R → 40, 31, 12, 23, **04**

A → 55, 76, 97, **68**, 89

Y → 10, 41, **02**, 33, 24

27. (C) Since Pluto is the farthest to the Sun so it takes about 248 years to complete one revolution. Mercury is nearest so it takes 88 days to complete one revolution. Our Earth revolves once in about 365 days and 6 hours.

28. (D) Radio waves are transmitted through Ionosphere.

29. (D) Tungabhadra Project: It is a joint undertaking of Andhra Pradesh and Karnataka. The project comprises a 2441 metres long and 50 metres high straight gravity masonry dam across the Tungabhadra (a tributary of Krishna river) at Mallapur in Bellary district of Karnataka, two irrigation canals and power houses on both sides of the dam.

30. (B) At present (2009), the Eighth Schedule of the Constitution specifies 22 languages (originally 14 languages). These are 1. Assamese 2. Bengali 3. Gujarati 4. Hindi 5. Kannada 6. Kashmiri 7. Malayalam 8. Marathi 9. Oriya 10 Punjabi 11. Sanskrit 12. Sindhi 13. Tamil 14. Telugu 15. Urdu 16. Manipuri 17. Nepali 18. Konkani 19. Bodo 20. Maithili 21. Dogri 22. Santhali

Note: Sindhi was added by the 21st Amendment Act of 1967; Konkani, Manipuri and Nepali were added by the 71st Amendment Act of 1992 and by the 92nd Constitutional Amendment Act, 2003, four new languages - Bodo, Maithili, Dogri and Santhali - were added to the Eighth Schedule of the Indian constitution.

31. (C) An electric charge always flows from a body at higher potential to a body at a lower potential irrespective of the amounts of charges contained in them. In the question, no current flows. So there is no potential difference.

32. (B) Former Reserve Bank of India Governor C Rangarajan has been conferred with the lifetime achievement award for his contribution to statistics. The award has been given to him on the occasion of Statistics Day, which is celebrated on June 29 every year. C Rangarajan had served as the Chairman of the National Statistical Commission.

33. (C) Alkaline phosphate is an anti-rust solution. Painting and galvanizing also prevent rusting.

35. (C) Sodium chloride, used as a general cleanser. It is also used as an antiseptic mouthwash.

37. (D) BRICS is a grouping acronym of leading emerging economies: Brazil, Russia, India and China. South Africa was included into the BRIC group in 2010. The acronym was coined by Jim O' Neill in a 2001 paper entitled Building Better Global Economic BRIC's. The BRIC countries met their first official summit on June 16, 2009 in Yekaterinburg, Russia.

38. (D) Abanindranath Tagore founded Bengal School of Art' along with EB Havell. He led the neo-art movement, i.e. to regenerate ancient and medieval artist's supreme mental weapon in modern setting.

40. (B) The Bombay Reorganization Act, which came into effect on May 1, 1960, divided the then Bombay province into two separate states namely Maharashtra and Gujarat, on the basis of language.

41. (A) World AIDS Day, designated on 1 December every year since 1988, is an international day dedicated to raising awareness of the AIDS pandemic caused by the spread of HIV infection and mourning those who have died of the disease.

43. (C) Harijan Sevak Sangh is a non-profit organisation founded by Mahatma Gandhi in 1932 to eradicate untouchability in India, working for Harijan or Dalit people and upliftment of Depressed Class of India.

44. (B) Tropic of Cancer (23°N) passes through the state of Gujarat.

46. (C) West Indies opener Chris Gayle has become the first-ever player to smash 500 sixes in international cricket. He achieved this feat in the ongoing 5-match One Day International (ODI) series against England at National Cricket Stadium in Grenada, West Indies on 27 February.

47. (D) The increasing order of u is water 1.33; crown glass 1.51; flint glass 1.56 and diamond 2.4.

50. (C) The Greenhouse Gases Observing Satellite or GO SAT, also known as lbuki (meaning "breath" or "vitality" in Japanese is an Earth Observation Satellite and the world's first satellite dedicated to greenhouse monitoring. It measures densities of carbon dioxide and Methane from 56000 locations on the Earth's atmosphere. The GOSAT was developed by Japan Aerospace Exploration Agency (JAXA) and launched on January 23, 2009, from the Tanegashima Space Centre.

51. (A) Required average = $8 \times \dfrac{75}{100} : 9 \times \dfrac{200}{3} \times \dfrac{1}{100} : 15 \times \dfrac{80}{100}$

    = 8 × 75 : 3 × 200 : 15 × 80

    = 8 × 3 : 3 × 8 : 3 × 16 = 1 : 1 : 2

52. (A) Required average = $\dfrac{2 \times 18 + 3 \times 21}{2 + 3} = \dfrac{36 + 63}{5} = \dfrac{99}{5}$ kg

53. (B)
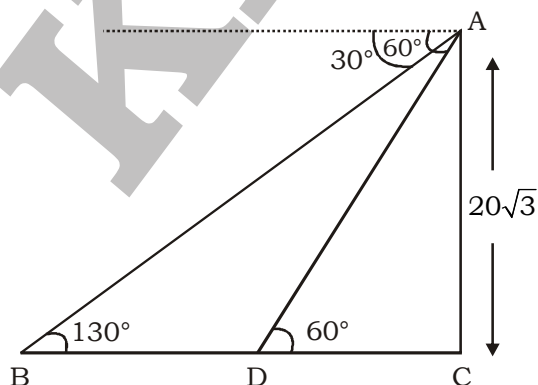
In ΔADC,

$$\tan 60° = \frac{20\sqrt{3}}{DC}$$

$$\sqrt{3} = \frac{20\sqrt{3}}{DC}$$

DC = 20 cm

In ΔABC,

$$\tan 30° = \frac{20\sqrt{3}}{BD + DC}$$

$$\frac{1}{\sqrt{3}} = \frac{20\sqrt{3}}{BD + 20}$$

BD + 20 = 60

BD = 40 m

Speed = $\frac{40}{10}$ = 4 m/sec

$\therefore$ Required time = $\frac{BD + DC}{4} = \frac{40 + 20}{4} = \frac{60}{4}$ = 15 second

54. (D) Let the principal = P

ATQ,

$$P\left[1 + \frac{12}{100}\right]^3 = 7727.104$$

$$P\left[\frac{28}{25}\right]^3 = 7727.104$$

$$P = \frac{7727.104 \times 15625}{21952}$$

P = ₹ 5500

55. (C) The distance covered by the first runner in 8 : 30 - 6 : 00 = 2 : 30 hours

$$= \frac{5}{2} \times 8 = 20\,km$$

Required time = $= \frac{20}{10 - 8} = \frac{20}{2} = 10\,hours$

Hence, at 8 : 30 + 10 = 6 : 30 (in pm), the second runner will overtake the first runner.

56. (A) $x = \frac{(\sqrt{2} + 1)}{(\sqrt{2} - 1)} = \frac{\sqrt{2} + 1}{\sqrt{2} - 1} \times \frac{\sqrt{2} + 1}{\sqrt{2} + 1}$

$$x = \frac{2 + 1 + 2\sqrt{2}}{2 - 1} = 3 + 2\sqrt{2}$$

$$\frac{1}{x} = \frac{1}{3 + 2\sqrt{2}} = \frac{1}{3 + 2\sqrt{2}} \times \frac{3 - 2\sqrt{2}}{3 - 2\sqrt{2}}$$

$$\frac{1}{x} = \frac{3 - 2\sqrt{2}}{9 - 8} = 3 + 2\sqrt{2}$$

$$x + \frac{1}{x} = 3 + 2\sqrt{2} + 3 - 2\sqrt{2}$$

$$x + \frac{1}{x} = 6$$

$$\left(x + \frac{1}{x}\right)^2 = 36$$

$$x^2 + \frac{1}{x^2} + 2 = 36$$

$$x^2 + \frac{1}{x^2} = 34$$

$$\frac{x^5 + x^4 + x^2 + x}{x^3} = x^2 + x + \frac{1}{x} + \frac{1}{x^2}$$

$$= x^2 + \frac{1}{x^2} + x + \frac{1}{x}$$

$$= 34 + 6 = 40$$

57. (A) A   24 ⟍   8
         B   32 ⟩192   6
         C   64 ⟍   3
                            ———
                             17

Work done by (A + B + C) in first 6 days = 17 × 6 = 102
Remaining work = 192 – 102 = 90
Work done by C in last 6 days = 3 × 6 = 18
Remaining work was done by (B + C) = 90 – 18 = 72

Time taken by (B + C) to do 72 work = $\frac{72}{9}$ = 8 days

Total time for finish the work= (6 + 8 + 6) = 20 days

58. (D) $\dfrac{M_1 D_1}{W_1} = \dfrac{M_2 D_2}{W_2}$

$$\frac{250 \times 12}{2} = \frac{M_2 \times 25}{(7 - 2)}$$

M_2 = 300
More worker needed = 300 – 250 = 50

59. (A) Perimeter of rhombus = 140 cm

Side of rhombus = $\dfrac{140}{4}$ = 35 cm

ATQ,
$x \times 35 = 42$

$x = \dfrac{42}{35}$ = 1.2 cm

60. (D) ATQ,

$(2q - 1)^2 + (2q)^2 = (2q + 1)^2$

$4q^2 + 1 - 4q + 4q^2 = 4q^2 + 1 + 4q$

$4q^2 - 8q = 0$

$4q(q - 2) = 0$

$q = 0$ or $q = 2$

Side can't be negative.

So, sides of triangle are 3, 4 and 5 respectively.

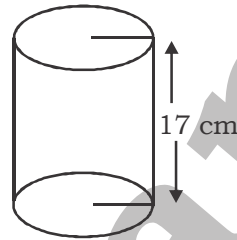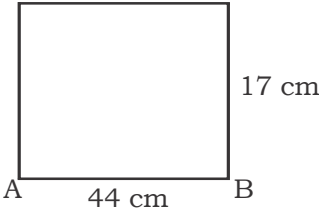Area of triangle = $\frac{1}{2} \times 3 \times 4 = 6$ cm²

61. (B) $x + y = 5$

$x = 5 - y$

ATQ,

$(x - 2)^3 + (y - 3)^3 = (5 - y - 2)^3 + (y - 3)^3$

$= (3 - y)^3 - (3 - y)^3 = 0$

62. (A)

Circumference of circle = $2\pi r$

$2\pi r = 44$

$\frac{2 \times 22}{7} \times r = 44$

$r = 7$ cm

Volume of cylinder = $\pi r^2 h = \frac{22}{7} \times 7 \times 7 \times 17 = 2618$ cm³

63. (B) $x = 3 + 2\sqrt{2}$

$\frac{1}{x} = \frac{1}{3 + 2\sqrt{2}} \times \frac{3 - 2\sqrt{2}}{3 - 2\sqrt{2}}$

$= \frac{3 - 2\sqrt{2}}{9 - 8} = 3 - 2\sqrt{2}$
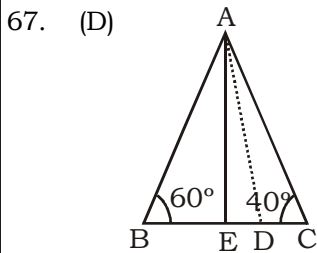
$x + \frac{1}{x} = 3 + 2\sqrt{2} + 3 - 2\sqrt{2} = 6$

$x^2 + \frac{1}{x^2} = (6)^2 - 2 = 34$

$x^4 + \frac{1}{x^4} = (34)^2 - 2 = 1154$

64. (B) $x + y = 4$

$x - y = 3$

So, $x = 3.5$ and $y = 0.5$

$16xy(x^2 + y^2) = 16 \times 3.5 \times 0.5[(3.5)^2 + (0.5)^2] = 350$

65. (A) $(x^2 + x + 1)(x^2 - x + 1) = [(x^2 + 1) + x][(x^2 + 1) - x]$

$= x^4 + 1 + 2x^2 - x^2$

$= x^4 + x^2 + 1$

So, coefficient of $x^2 = +1$

66. (C) ATQ,

(Interior angle) − (Exterior angle) = 150°

(Interior angle) + (Exterior angle) = 180°

Exterior angle = $\dfrac{180° - 150°}{2}$ = 15°

So, number of sides of polygon = $\dfrac{360°}{15°}$ = 24

67. (D)

In $\triangle ABC$,

$\angle BAC = 180° - 60° - 40° = 80°$

So, $\angle BAE = 180° - 60° - 90° = 30°$

$\angle BAD = \dfrac{1}{2} \times \angle BAC = 40°$

So, $\angle EAD = 40° - 30° = 10°$

68. (B) Let quantity of milk and water in solution is 5x : 3x.

ATQ,

$$\dfrac{5x - 10 \times \dfrac{5}{8}}{3x - 10 \times \dfrac{3}{8} + 10} = \dfrac{10}{11}$$

$$\dfrac{\dfrac{40x - 50}{8}}{\dfrac{24x - 30 + 80}{8}} = \dfrac{10}{11}$$

$$\dfrac{40x - 50}{24x + 50} = \dfrac{10}{11}$$

$440x - 550 = 240x + 500$

$440x - 240x = 500 + 550$

200x = 1050

$$x = \frac{1050}{200} = 5.25$$

Total quantity of solution = 5x + 3x = 8x

= 8 × 5.25 = 42 litres

69. (C) Marked Price = ₹ 800

Cost Price = ₹ 612

Percentage Discount

$$= \left(1 - \frac{612}{800} \times \frac{100}{90}\right) \times 100 = (1 - 0.85) \times 100 = 15\%$$

70. (B) Selling price of first TV = ₹ 3450

Profit % = 15%

Profit earned on first TV = Loss on second TV

$$= 3450 \times \frac{15}{115} = ₹\ 450$$

Percentage loss = 10%

Cost price of second TV = $450 \times \frac{100}{10} = ₹\ 4500$

71. (D) Students failed in both subjects = 100 – (60 + 55 – 50) = 35%

Student failed = 70

Total number of students = $70 \times \frac{100}{35} = 200$

72. (C) Required percentage = $\frac{24 - 8}{8} \times 100 = 200\%$

73. (A) Required difference = $1875 \times [24 - 16] \times \frac{1}{100} = 150$

74. (D) Sectorial angle = $\frac{32}{100} \times 360° = 115.2°$

75. (A)

MEANINGS IN ALPHABETICAL ORDER

Alimony	a husband's or wife's court-ordered provision for a spouse after separation or divorce	गुजारा–भत्ता
Aromatic	having a pleasant and distinctive smell	सुगन्धित
Assassin	a murderer of an important person in a surprise attack for political or religious reasons	हत्यारा
Befit	be appropriate for	के अनुकूल
Clad	clothed	कपड़े पहने हुए
Commensurate	corresponding in size or degree; in proportion	(किसी वस्तु) के अनुरूप
Condole	express sympathy for (someone)	दुःख में हमदर्दी दिखाना
Console	comfort (someone) at a time of grief or disappointment	सांत्वना देना
Fable	a short story, typically with animals as characters, conveying a moral	जानवरों के किरदारों वाली एक नीति कथा
Fiasco	a complete failure	असफलता
Kleptomaniac	a person who cannot control their desire to steal things, usually because of a medical condition	वह व्यक्ति जो आमतौर पर अपनी चिकित्सीय स्थिति के कारण चीज़ों को चोरी करने की अपनी इच्छा को नियंत्रित नहीं कर सकता हो
Optometrist	A person who has a profession of examining the eyes for visual defects and prescribing corrective lenses	आँखों के लिए लेंस बनाने वाला
Pantheist	one who practice a doctrine that equates God with the forces and laws of the universe	वह ब्रह्मांड की शक्तियों और उसके को भगवान मानता है
Parsimony	extreme unwillingness to spend money or use resources	मितव्ययिता
Pedantic	showing much knowledge	पांडित्य पूर्ण
Perennial	lasting or existing for a long or apparently infinite time	चिरस्थायी
Philanderer	a man who readily or frequently enters into casual sexual relationships with women	स्त्री लोलुप
Rhetoric	the art of effective or persuasive speaking or writing	वाकपटु
Tart	sharp or acid in taste	खट्टा
Verbatim	in exactly the same words	शब्दशः

SSC MOCK TEST - 277 (ANSWER KEY)

1.	(D)	26.	(A)	51.	(A)	76.	(D)
2.	(A)	27.	(C)	52.	(A)	77.	(A)
3.	(D)	28.	(D)	53.	(B)	78.	(A)
4.	(C)	29.	(D)	54.	(D)	79.	(D)
5.	(D)	30.	(B)	55.	(C)	80.	(C)
6.	(D)	31.	(C)	56.	(A)	81.	(B)
7.	(C)	32.	(B)	57.	(A)	82.	(D)
8.	(A)	33.	(C)	58.	(D)	83.	(D)
9.	(B)	34.	(D)	59.	(A)	84.	(C)
10.	(C)	35.	(C)	60.	(D)	85.	(C)
11.	(C)	36.	(C)	61.	(B)	86.	(C)
12.	(D)	37.	(D)	62.	(A)	87.	(C)
13.	(D)	38.	(D)	63.	(B)	88.	(B)
14.	(A)	39.	(A)	64.	(B)	89.	(C)
15.	(C)	40.	(B)	65.	(A)	90.	(B)
16.	(C)	41.	(A)	66.	(C)	91.	(C)
17.	(C)	42.	(B)	67.	(D)	92.	(A)
18.	(A)	43.	(C)	68.	(B)	93.	(C)
19.	(A)	44.	(B)	69.	(C)	94.	(B)
20.	(B)	45.	(A)	70.	(B)	95.	(B)
21.	(A)	46.	(C)	71.	(D)	96.	(C)
22.	(C)	47.	(D)	72.	(C)	97.	(B)
23.	(C)	48.	(A)	73.	(A)	98.	(C)
24.	(C)	49.	(D)	74.	(D)	99.	(C)
25.	(A)	50.	(C)	75.	(A)	100.	(A)

76. (D) No error

77. (A) 'Bacteria' is a plural noun, hence it is followed by a plural verb. Change 'is' into 'are'.

86. (C) Verb 'prefer' is followed by 'to'.

87. (C) No improvement. 'Taxes' is Third Person Plural Noun, therefore, 'they' should be used for it.

90. (B) The correct spelling of 'Optomatrist' is 'Optometrist'.

91. (B) The correct spelling of 'Perenial' is 'Perennial'.